REMARKS / ARGUMENTS

Claims 1-17, 20, 23-30, 32-34 remain in the application.

In response to the Examiner's "Response to Arguments" of 10/19/06, the Examiner continues to not find Applicant's arguments to be persuasive, essentially asserting that "Digital cameras are notoriously well known in the art to be able to at least process and interpret images." However, the Examiner is also willing to accept the statement from Applicant's specification at page 1 that describes a vision processor as "for at least processing and interpreting images." Therefore, the Examiner is asserting that digital cameras are the same as vision processors, since according to him, they do the same things, i.e., they both "at least process and interpret images".

However, the statement "Digital cameras are notoriously well known in the art to be able to at least process and interpret images." is clearly FALSE. This can be proven in a few ways. For example, Wikipedia describes a digital camera as follows:

Digital camera

Wikipedia, the free encyclopedia

A **digital camera** is an electronic device used to capture and store photographs electronically instead of using photographic film like conventional cameras.

And WordNet® 2.1, © 2005 Princeton University, defines "digital camera" as a noun meaning: "a camera that encodes an image digitally and stores it for later reproduction". These definitions are representative of and similar to ALL definitions of "digital camera", regardless of the source of the definition.

Applicant points out that these two sources are entirely **silent** on a digital camera performing any "processing and interpreting images". That's because encoding is not processing, since encoding merely transforms an analog image into a digital image. Encoding is not interpreting. Storing is not processing, since storing does not change the image. Storing is not interpreting. Therefore, it is reasonable to conclude that a digital camera is NOT a vision processor, and does not include a vision processor.

Further Wikipedia lists the components of a "machine vision system" as including "One or more digital or analog cameras", "a processor", and "computer software to process images and detect relevant features". Thus, it's clear that the camera (digital or analog) does NOT include a processor, and does not include software to process images and detect relevant features (i.e., at least process and interpret the images).

Wikipedia, the free encyclopedia

Components of a machine vision system

A typical machine vision system will consist of several among the following components:

1. One or more digital or analog cameras (black-and-white or colour) with suitable optics for acquiring images
2. Lighting
3. Camera interface for digitizing images (widely known as a "frame grabber")
4. A processor (often a PC or embedded processor, such as a DSP)
5. Computer software to process images and detect relevant features.
6. A synchronizing sensor for part detection (often an optical or magnetic sensor) to trigger image acquisition and processing.
7. Input/Output hardware (e.g. digital I/O) or communication links (e.g. network connection or RS-232) to report results
8. Some form of actuators used to sort or reject defective parts.

Since a digital camera is ONLY A PART of a machine vision system, it is clearly true that a digital camera is NOT a machine vision system. Similarly, a wheel is only part of a car, so a wheel is NOT a car. A digital camera lacks the processor and the software to qualify as a machine vision system. A digital camera only does a portion of what a machine vision system can do, since a digital camera CANNOT do image processing, and CANNOT do image interpretation, such as detecting relevant features. Therefore, <u>a digital camera is NOT a machine vision system, and is not a vision processor.</u>

Regardless of whether the images from the digital camera 24 MUST be sent to the vision processor board 22 or not, the digital camera 24 is NOT performing image analysis or image interpretation ... that is done by the Mass Storage Unit. Col. 7, lines 65-67, and col. 8, lines 1-10. The board 22 is acting as a digitizer when receiving signals from the analog cameras 24. Col. 7, lines

37-43. Digitizing an analog image does not involve any image interpretation. The digital camera 24 already provides a digitized image, and so can then be analyzed and/or interpreted. Image interpretation is done in Meyer at mass storage unit 32, which includes "custom controls for image processing, image analysis, third party machine vision products, calibration, and interactive CAD/geometry", as set forth in col. 7, lines 65-67, and col. 8, lines 1-10.

Regardless of the number of "vision processors" that can be identified in Meyer, Meyer does not teach a network over which the vision processors communicate. A system bus is not a network, instead being for internal communication among system elements. Moreover, whatever UI that Meyer has is on the same computing platform as the vision processor(s) of Meyer.

Thus, Meyer also fails to teach a UI on a separate computing platform which is connected to a network, as claimed by Applicant. The Examiner states that a machine vision UI computing platform is "taught as the use of a Visual Basic Toolbox presented to the user on a machine separate from the VPs for allowing the user control and selective communication with multiple VPs in the machine vision system and for the viewing of live and still images from those VPs at col. 4, lines 54-63, and col. 5, lines 4-5 and 15-20. However, this citation does not even explicitly mention a "Visual Basic Toolbox", and even if it did, a "tool

box" is NOT a user interface, but merely a set of tools for building a user interface, perhaps by following the specification of the present application.

Moreover, col. 5, lines 4-5 mentions "predefined interfaces are supported to exchange data between tools", but mentions only a single machine vision system (col. 3, lines 13-16: "The method includes the step of storing an application development program, including a first set of control programs representing possible components of a user interface for **the** machine vision system." This machine vision system lives on a single computing platform, which also supports the UI. By contrast, Applicants invention includes multiple VPs and a UI, each on a separate computing platform, each computing platform communicating via a network.

The Examiner also states that Meyer "also teaches a link function enabling a user to configure any second VP using the machine vision UI (taught as the camera control of col. 5, lines 57-67, and for establishing communication between a second VP in the machine vision system and the machine vision UI (taught as the linking of a camera to a Camera control at col. 6, lines 10-16)". However, again, the first and any second VP of Meyer are all on the same computing platform, and there is no network. The "camera" is not a VP, and the Camera control is not a UI that can control a VP, merely controlling a camera.

Further, since a camera is NOT a VP, Meyers fails to teach "establishing communication between a second VP in the machine vision system and the

machine vision UI", since "the linking of a camera to a Camera control (col. 6, lines 10-16) is NOT the same as the linking of a VP to a UI.

Yet further, Meyer does NOT teach enabling a continually updated image display on the at least one machine vision UI representing a current state of a second VP in the machine vision. The Examiner asserts that this is taught as the display of live images, at col. 6, lines 10-18. However, that cite has nothing to do with the display of live images, in fact not mentioning "display" of anything, and is totally silent on images of any kind. By contrast, Applicant teaches and claims the display of live images, such as in amended claim 1:

"the communication via the network <u>established by the link function</u> enabling a continually updated image display on the at least one machine vision UI representing a current state of the any second VP connected to the network".

The Examiner admits that Meyer fails to explicitly teach providing a first VP with a link function, the link function being a control function executable by the first VP, and executing the link function so as to issue instructions from the first VP to the UI to establish communication with a second VP, as claimed.

The Examiner notes that Van Dort allows for control of audio and video equipment, but fails to note that Van Dort is silent on "the communication via the network <u>established by the link function</u> enabling a <u>continually updated image display</u>", as now required by claim 1. However, Van Dort merely issues "instructions" via an internal bus 10, as shown in Fig. 1, not actual video, i.e., not a <u>continually updated image display</u>, as claimed.

The Examiner also states that Van Dort teaches "the use of an actuator connected to equipment in the system, wherein a change of state in the actuator sends a signal out to other equipment units, which may change their state in a way contained by the signal, at col. 5, lines 55-64. However, when one reads col. 5, lines 55-64, it does not describe Applicant's invention. In Applicant's invention, a VP instructs a UI to connect to another VP. Van Dort at col. 5, lines 55-64 describes a case so general as to not teach Applicant's invention. For example, "if an actuator changes state" (col. 5, lines 55-56): assuming that a VP is an actuator, then what does it mean to "change state"? Van Dort does not say. In fact, Applicant's VP sends a particular message to the UI, instructing it to connect to another VP. Van Dort then mentions "messages to the units", not specifying what units, and not specifying what's in the message other than the address of the units. Van Dort offers a list of possible contents of the message: "a message may contain merely an address of the destination equipment unit" (col. 5, lines 58-59). This teaches away from Applicant's invention, since in Applicant's invention the destination equipment is the UI, and it would not be Applicant's invention if the message did not also include the identity and/or address of another VP, as taught and claimed by Applicant.

Van Dort also says that the message may also contain a "general instruction". (col. 5, line 60). This is clearly not specific enough to teach Applicant's invention. Van Dort further states that the message "may be related to the specific change of state of the actuator unit" (col. 5, lines 60-61). This is

also too general and vague to teach Applicant's invention, also describing many situations that have nothing to do with Applicant's invention. "May be" also implies "may not be". The Examiner is reading his understanding of Applicant's invention into Van Dort. Thus, Van Dort does NOT teach Applicant's invention, or any aspect of it.

Further, Applicant does not teach "mark" signals. Regarding "link" signals, Applicant claims a "link function", and not "link signals". The phrases look similar, but are of entirely different nature and function. For example, the Examiner states that "the graphic interface of Van Dort may be used to generate 'mark' and 'link' signals between devices, citing col. 10, lines 24-28. Clearly, the "graphic interface" of Van Dort is some kind of user interface (UI). However, the link function of Applicant's invention is clearly claimed as residing within the first VP, NOT the UI: "providing a first VP with a link function, the first VP being on a first VP computing platform connected to a network, the link function being a control function executable by the first VP".

Van Dort offers further confusion, since Van Dort states: "Considered from the system, the graphical user interface 100 is a <u>combination</u> of an actuator unit and an equipment unit, <u>not unlike other units</u>" (col. 10, lines 1-3). This is clearly different from Applicant's invention, where there is an important separation of the identity and function of the VPs and the UI, as clearly set forth in the claims.

Therefore, it would NOT have been obvious to combine Van Dort with Meyer. Further, even if such a combination were to be made, it would not result in Applicant's invention.

The Examiner states that "one would be motivated to make such a combination for the advantage of flexible configuration for interactions between different pieces of equipment in a system". However, Van Dort is TOO flexible, since it makes no clear distinction between the UI and any other device, such as a VP. The system of Van Dort is also not clearly defined, so it's not clear that the flexibility would be applicable to Meyer.

The Examiner admits that both Meyer and Van Dort fail to explicitly teach the communication of the plurality of VPs and the UI over a network. The Examiner asserts that Silver teaches a method for the control of machine vision tools similar to that of Meyer and Van Dort, but offers NO support for that statement.

Silver states in the Abstract:

> improved methods and apparatuses are presented to allow a user to select, via a user interface of a web browser included in a given computer, a machine vision tool. Via the web browser, the user can select training information to be used for training. The selected training information can then be sent to a machine vision tool computer which includes a machine vision tool. The web browser can then send a command to the machine vision tool computer to train the machine vision tool using the selected training information.

Silver does teach communication via a network, but totally fails to teach the complex behavior as claimed regarding the link function:

"providing a first VP with a link function, the first VP being on a first VP computing platform connected to a network, the link function being a control function executable by the first VP,

the link function being both for enabling a user to configure any second VP connected to the network using the at least one machine vision UI on a machine vision computing platform connected to the network, and for establishing communication via the network between the any second VP of the plurality of VPs and the at least one machine vision UI on the machine vision UI computing platform, the any second VP being on a second VP computing platform,

the communication via the network enabling a continually updated image display on the at least one machine vision UI representing a current state of the any second VP connected to the network".

The Examiner also asserts that "one would have been motivated to make such a combination (of Silver with Meyer and Van Dort) for the advantage of increased accessibility to multiple vision processor systems, citing col. 1, lines 40-46. However, Silver does NOT explicitly teach increased accessibility to multiple vision processor systems. There is no figure in Silver showing more than one vision processor (VP). Instead, Silver mentions a plurality of machine

vision tools, which one of average skill in machine vision knows can reside on one vision system, and this situation is what was shown and described in Silver. Silver mentions a single "separate platform", i.e., a machine vision system separate from the UI, but fails to mention a second machine vision system:

> The present invention accordingly improves upon the accessibility of machine vision tools. Certain aspects of the invention are directed to improved methods or systems (or subparts thereof) that allow a user to select, via a standard user interface which may comprise a web browser included in a given computer, a machine vision tool stored on a separate platform. Via the web browser, the user can select training information to be used for training. The selected training information can then be sent to a machine vision tool computer which includes a machine vision tool. The web browser can then send a command to the machine vision tool computer to train the machine vision tool using the selected training information.

Thus, Silver fails to provide the teaching of multiple VPs communicating over a network, just as Meyer and Van Dort fail to teach multiple VPs communicating over a network. Therefore, combining these references would NOT result in Applicant's invention, which clearly teaches and claims multiple VPs communicating over a network with a UI.

Accordingly, Applicant deems that the rejection of claim 1 is overcome.

Since all the other claims in the application either depend from claim 1, or are analogous to claim 1, the rejection of these claims is also deemed to be overcome.

Accordingly, Applicants assert that the present application is in condition for allowance, and such action is respectfully requested. The Examiner is invited to phone the undersigned attorney to further the prosecution of the present application.

Respectfully Submitted,

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